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## HUMIDOR WITH ENVIRONMENTAL CONTROL UNIT

### PRIOR HISTORY

This application claims the benefit under 35 U.S.C. §119 (c) of U.S. provisional application Ser. No. 60/033,641 filed Dec. 20, 1996.

### BACKGROUND OF THE INVENTION

#### 1. Field of the Invention

This invention relates to humidors for maintaining moisture in vegetable matter in general and tobacco products in particular.

#### 2. Description of the Related Art

Humidors have long been known for the storage of cigars and other vegetable matter. It is also known to provide large cabinet humidors having transparent surfaces in tobacco shops, that patrons might view the contents thereof and make purchase decisions.

A disadvantage of the prior art is that the contents of the cabinet humidors are difficult to view. Often the would-be purchaser must approach the humidor closely to peer through the transparent surfaces. Frequently, it is necessary to open the humidor to visually examine the cigars, despite the presence of transparent surfaces, because prior art humidors position the cigars in a generally horizontal position.

Prior art cabinet humidors are also often very large, indeed massive, and take up valuable floor space. Small tobacco shops will therefore usually not carry properly stored cigars. In restaurants, any humidor larger than the traditional box humidor takes up enough space that it must be mounted in the areas of the establishment that are accessible to patrons, since they will not fit behind the counter or bar. This creates a security problem often requiring the placement of a lock on the humidor door. Such locks waste valuable employee time since it is necessary for the would-be purchaser to track down an employee with the key. If an employee is not immediately available, a sale may be lost as the customer becomes frustrated.

Small box-type humidors are an unimpressive substitute for the larger cabinets. These boxes are best for home use, yet many business establishments, particularly nightclubs, use them because they are easily kept behind a bar or counter so as to eliminate the security problems. Unfortunately, valuable employee time is wasted when the customer must ask to see the available selection. The bartender or waiter must then stand patiently, box in hand, while the customer peers therein, asking the price of each brand and size of cigar.

Glass jar humidors are also known. These comprise glass jars in which cigars are tightly bundled. The cigars must be removed vertically by reaching down through the top of the jar. This type of humidor is useful for displaying only one type or brand of cigar and placement and removal of the contents is cumbersome and ungainly, particularly when the jar is full and the contents tightly packed. Similar jar-type humidors are described in U.S. Pat. No. 4,008,930 and in design patent U.S. Pat. No. D293,608.

A major disadvantage of both box-type and jar-type humidors is that they provide access to the products they contain from an opening at the top. Since humid air rises relative to dry air, each time a top-access-type humidor is opened the humid air therein is dumped into the atmosphere and rapidly replaced with drier air. Frequent cycles of humid and dry air can and will damage such products as fine

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hand-rolled cigars, causing their wrappers to flake and internal structure—the filler and binder—to fracture. This is because tobacco shrinks and expands in response to changing humidity. A typical nightclub might sell about sixty cigars in a single evening, representing sixty cycles of humidity shock to cigars stored in such containers.

This invention provides a humidor of space-saving design that is easily adapted to a barshelf or mounted on a wall and may be used in small tobacco shops, bars, restaurants, nightclubs and other such establishments. The humidor of this invention allows easy viewing of the contents thereof, so that would-be purchasers can make a purchase decision without opening the humidor or consuming the valuable time of employees. Further, because of the space-saving features of the invention, the humidor may be placed or mounted behind a sales counter or other such employee/patron barrier and thereby provide effective security against theft and shoplifting. Alternatively, the humidor of the present invention may be mounted upon a wall while presenting a slim profile that will not waste valuable floor space. The humidor of this invention also provides lateral access to the contents thereof, allowing for ease of insertion and removal of the products stored and significantly reducing changes in humidity when opening and closing the container.

The unit provides a dramatic and prominent display of the goods therein, clearly displayed and illuminated. Though primarily intended for cigars, the unit is useful for certain valuable foodstuffs and is also of interest to certain specialty and health food stores.

### BRIEF SUMMARY OF THE INVENTION

This invention relates to a humidor comprising a container having one or more transparent surfaces permitting viewing of the interior thereof, means for controlling the humidity within the container, and means for positioning a plurality of cigars in said container in a substantially vertical manner and position so as to permit effective viewing through said one or more transparent surfaces.

In the preferred embodiment, the humidor is sized and shaped for placement upon a barshelf or adapted for mounting on a restaurant wall or other business establishment, thereby permitting display of the cigars therein to patrons. In a still more preferred embodiment, means are provided to display the type and price of each variety of cigar displayed in the humidor. Patrons may then make a selection as to the type and brand of cigar to purchase without the aid of an employee of the establishment.

Also described is an easily manufactured environmental control unit that may be used with any humidor, including that of the present invention. Using components already commercially available, the space-saving device efficiently controls both temperature and humidity.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a preferred embodiment of the invention.

FIG. 2 is a cross-sectional side view of the invention of FIG. 1.

FIG. 3 is a cross-sectional side view of another embodiment of the invention.

FIG. 4 is a transparent view of the environmental control unit of the invention.

### DETAILED DESCRIPTION OF THE INVENTION

This invention relates to a humidor comprising a container having one or more transparent surfaces permitting

viewing of the interior thereof, means for controlling the humidity within the container, and means for positioning a plurality of cigars in said container in a substantially vertical manner and position so as to permit effective viewing through said one or more transparent surfaces.

Referring to FIG. 1 there is depicted the "barshelf" embodiment of the present invention wherein there is provided a container 1 having a vertical dimension 4 generally not exceeding sixteen inches, preferably not exceeding fifteen inches, and more preferably not exceeding fourteen inches (i.e., about the height of the average liquor bottle) and a depth 5 generally not exceeding sixteen inches, preferably not exceeding 12 inches, and more preferably not exceeding 9 inches (i.e., not much deeper than a barshelf). This embodiment is primarily designed for the bar or nightclub proprietor who may easily and instantly convert his establishment into a "cigar-friendly" point of sale by simply clearing some bottles from a barshelf and mounting the unit in the space created thereby. Alternatively, the unit may also be used in stores containing shelving for other products. The width is at the discretion of the user and may be as wide as the intended use demands, but will be significantly larger than the depth. The space saving features of this invention are effected in the depth being substantially smaller than the width and less than or equal to the height. For a depth of ten inches, typical widths would be about thirty or more inches, generally about sixty to seventy inches, and in larger models about eighty to ninety inches. In general, the width will be at least twice the depth, typically at least thrice the depth, and preferably at least four times the depth. The height of the barshelf embodiment of FIG. 1 will generally be no more than about 1.5 times the depth, give or take an inch or two, as the situation demands.

In the embodiment shown, there is a central panel section 6, behind which is mounted means for controlling the humidity within the container, namely a humidifier (not shown) and, optionally, a dehumidification unit. For the purposes of this disclosure, "means for controlling humidity" will refer to any humidity control device, whether it humidifies, dehumidifies, or both. A temperature control unit may also be concealed behind this section. One or more panel controls 7 may be provided to set humidity and temperature. Light switches 14 may be provided here to control lights mounted within the humidor. One or more panel instruments 8 may also be provided to indicate humidity and temperature levels within the container. The panel section 6 need not be located in the center as shown. The actual location of the panel section is more a matter of esthetics than of function for smaller humidors, but if the container is constructed large relative to the power of the humidifier, then a generally central position will be preferred.

Preferred humidifiers are those of relatively small dimension and are electrically powered. Such units usually operate by simply blowing air upon a reservoir of water. Powered humidifiers are preferred over passive chemical-salt and evaporative-type humidifiers because it is anticipated that the hatches will be opened and closed frequently in commercial use, thereby requiring rapid means to maintain and restore the proper humidity levels for the products contained therein. For cigars, it is preferred that the relative humidity inside the container be kept at between 65 and 75 percent at about room temperature. As of the writing of this specification, suitable humidifiers include that sold under the trademark "Moist 'N Aire," manufactured and distributed by Globe Metal Manufacturing Company, 2150 North 10<sup>th</sup> Street, Philadelphia, Pa. 19122 and another sold as the

"Model 500U," manufactured and distributed by Hermidifier Company, 1812 Colonial Village Lane, Lancaster, Pa. 17605. Both are powerful and compact, the latter being perhaps much more powerful than needed. Both have humidistats—devices that shut off the humidifiers when the desired humidity is reached. In order to make the controls available on the central panel section 6, it is necessary to perform some minor reassembly of the humidifiers, but this does not involve anything excessively complicated to anyone handy with a screwdriver and a soldering iron. These humidifiers are about nine and twelve inches in width, respectively, and permit the width of the panel section 6 to be kept down to about ten to thirteen inches in width.

As for temperature control, this is easily achieved by using commercially available fish tank heaters or other submersible heater. As shown in FIG. 4, a typical humidifier is shown comprising a reservoir 14 and means 15 for forcing air on a body of water therein. Below the water level 16 is submerged a typical fish tank heater 17, and the power cord 18 brought up out of the water and out. The combination results in a compact and highly effective integrated environmental control unit. In a preferred embodiment, this power cord is spliced into the power cord of the air blower 19 so as to enable the entire unit to be supplied through one power line. In some cases, the design of the submersible heater allows a temperature control to be rigged and made available on the central panel section 6. By using submersible heaters, the water reservoir of the humidifier may be made to double as a thermal reservoir having a strong thermal "momentum" that is highly effective in stabilizing the internal temperature. Further, the cooling effect of blowing air on the water reservoir is immediately detected and counteracted by the heater before the effects can be felt in throughout the humidor. For cigars and other tobacco products, it is preferred that the internal temperature be maintained between 60° and 80° Fahrenheit, preferably between 65° and 75° Fahrenheit. Ideally the interior of the container will be maintained at 70 percent relative humidity and 70° Fahrenheit when storing cigars—this is often referred to as the "70/70 Rule." Other means known in the art for controlling air temperature, such as air heating coils, may also be utilized.

Referring again to FIG. 1, there are also provided means for lateral access to the contents of the container in the form of one or more hatches 3 that cover lateral openings in the container. The hatches are preferably hinged to the container so that they may be swung open. Also provided are one or more transparent surfaces 2 for permitting viewing of the contents of the container. These are preferably of glass or plastic or other material that prohibits the passage of water vapor. In the preferred embodiment, the transparent surfaces are mounted on the hatches as shown. Display cards 13 are positioned by display support means 12 so as to be visible through the transparent surfaces and permit display of product name, price, or other relevant information. The hatches are opened so as to permit access to the contents of the container. The hatches need not provide a hermetic seal when closed, but the fit should at least be close enough to prevent or significantly obstruct vapor leakage. Generally, the seal will be "loose" enough so as to disallow any more than a ten percent pressure differential between the interior of the container and the surrounding atmosphere, more preferably a five percent differential in pressure.

The hatch, therefore, will generally fit to the container with smoothly polished surfaces and will not be fitted with elastic seals. Where the doors are large and/or heavy, it is preferred that they be rabbeded to the container frame.